AMENDMENTS TO THE CLAIMS

Please amend the claims as indicated in the following listing of all claims:

1. (Cancelled)

2. (Cancelled)

3. (Cancelled)

4. (Cancelled)

5. (Cancelled)

6. (Currently amended) The data network recited in claim [[5]] 8, wherein a software program allocates the data information packet to one of the transmission channels according to at least one of the predetermined criteria.

7. (Original) The data network recited in claim 6, wherein the software program is one of a user program and a system program.

8. (Currently amended) A data network comprising:

a sending node;

a receiving node coupled to receive a plurality of data information packets from the sending node; and

at least a first and second transmission channel coupled to the sending and receiving nodes, wherein each data information packet transmitted across the network is selected for transmission on one of the first and second transmission channels according to predetermined criteria and wherein the predetermined criteria includes a type of operation associated with the data information packet and

wherein the type of operation includes a synchronization operation, and wherein the synchronization operation includes at least one of a lock operation, an atomic read-modify-write operation, and a fetch-and-increment operation.

9. (Cancelled)

10. (Currently amended) The data network recited in claim [[5]] 8 wherein the data network is a switched data network having at least one switch for each channel.

11. (Currently amended) The data network recited in claim [[5]] 8 wherein at least one of the sending node and the receiving node includes a plurality of buffer descriptors identifying memory segments containing data.

12. (Currently amended) The data network recited in claim [[5]] 8 wherein the sending node and the receiving node are nodes within a cluster network.

13. (Currently amended) The data network as recited in claim [[5]] 8 wherein a node includes separate send and receive buffers for the first and second transmission channels.

14. (Currently amended) A data network comprising:

a sending node;

a receiving node coupled to receive a plurality of data information packets from the sending node; and

at least a first and second transmission channel coupled to the sending and receiving nodes, wherein each data information packet transmitted across the network is selected for transmission on one of the first and second transmission channels according to predetermined criteria wherein the first and second transmission channels are, respectively, a low latency channel for transmitting data packets meeting a low latency criteria, and a high bandwidth channel for transmitting data packets meeting a high bandwidth criteria;

a scheduler circuit for the high bandwidth channel coupled to the high bandwidth channel and low latency channel; and wherein the scheduler circuit is coupled to receive a request sent into the low latency channel, the request requesting permission to transmit a packet over the high bandwidth channel, the scheduler logic responsive to the request to provide a grant indication over the low latency channel indicating the request was granted; and

wherein the grant indication is transferred with a higher priority across the low latency channel than other low latency traffic, wherein the grant indication includes a unique identifier corresponding to a number of an output port through which the grant indication was sent and wherein during node initialization, a node coupled to the output port listens to grant packets and uses the unique identifier as its node identifier in subsequent transactions over the data network.

15. (Currently amended) ~~The data network as recited in claim 14~~ A data network comprising:

a sending node;

a receiving node coupled to receive a plurality of data information packets from the sending node; and

at least a first and second transmission channel coupled to the sending and receiving nodes, wherein each data information packet transmitted across the network is selected for transmission on one of the first and second transmission channels according to predetermined criteria wherein the first and second transmission channels are, respectively, a low latency channel for transmitting data packets meeting a low latency criteria, and a high bandwidth channel for transmitting data packets meeting a high bandwidth criteria;

a scheduler circuit for the high bandwidth channel coupled to the high bandwidth channel and low latency channel; and wherein the scheduler circuit is coupled to receive a request sent into the low latency channel, the request requesting permission to transmit a packet over the high bandwidth channel, the scheduler logic responsive to the request to provide a grant indication over the low latency channel indicating the request was granted; and

wherein the grant indication is provided at a fixed time in each frame, a frame being ~~relative to~~ a predetermined time period, and the grant indication synchronizes nodes of the network to the frame ~~the predetermined time period~~.

16. (Cancelled)

17. (Cancelled)

18. (Original) The data network as recited in claim 14 wherein the request indication, the grant indication and an acknowledge indication are always sent at different times over the low latency channel, thereby avoiding collisions between the request indication, the grant indication and the acknowledge indication, the acknowledge indication being sent by a receiving node over the low latency channel to indicate successful receipt of information sent over the high bandwidth channel.

19. (Cancelled)

20. (Cancelled)

21. (Cancelled)

22. (Currently amended) A method for transmitting data traffic between at least a first and second node in a network having at least a first and second transmission channel, the method comprising:

organizing the data traffic prior to transmission across the network into at least a first and second group according to predetermined criteria;

transmitting the first group of the data traffic over the first transmission channel and the second group of the data traffic over the second transmission channel wherein the first and second transmission channels are respectively a high bandwidth channel and a low latency channel;

scheduling transmittal of data traffic across the high bandwidth channel using control information transmitted over the low latency channel; [[and]]

transmitting control information relating to network protocol over one of the first and second transmission channels along with one of the first and second groups of data traffic;

transmitting smaller sized data packets across the low latency channel with limited scheduling; and

transmitting highly scheduled large sized data packets across the high bandwidth channel.

23. (Original) The method recited in claim 22 wherein the first and second transmission channels are independent.

24. (Cancelled)

25. (Cancelled)

26. (Cancelled)

27. (Currently amended) The method recited in claim [[25]] 22 further comprising:

transferring the control information across the low latency channel with a higher priority than the ~~first~~ second group of data traffic transferred across the low latency channel, the control information being related to scheduling of the high bandwidth channel.

28. (Original) The method as recited in claim 27 wherein the higher priority prevents the control information from being dropped.

29. (Cancelled)

30. (Cancelled)

31. (Cancelled)

32. (Original) The method recited in claim 22 wherein at least one of the transmission channels is associated with a plurality of lists of buffer descriptors, the lists of buffer descriptors related to a plurality of memory segments.

33. (Cancelled)

34. (Cancelled)

35. (Cancelled)

36. (Cancelled)

37. (Cancelled)

38. (Cancelled)

39. (Cancelled)